

CLAIMS

1. A safety arrangement for a motor vehicle, the safety arrangement comprising:

a crash sensor configured to sense a potential accident situation involving the vehicle and to generate a signal;

and a component of the suspension of the vehicle of adjustable length, located between at least each front wheel of the vehicle and a fixed part of the vehicle structure;

the component of adjustable length comprising a chamber filled with a fluid and having a fluid outlet provided with a valve arrangement, said valve arrangement being actuable in response to said signal to permit fluid to escape from the chamber, thereby reducing the overall length of the chamber to lower at least the front part of the vehicle, relative to the ground, in response to the sensing of a potential accident situation;

wherein said valve arrangement comprises a valve seat and a valve member, the valve member being moveable between a first position in which the valve member seals against the valve seat to prevent the flow of fluid therebetween from within the chamber, and a second position in which the valve member is spaced from the valve seat to permit the flow of fluid therebetween from within the chamber, the valve member initially being urged towards said first position by a pilot fluid supply at a pressure substantially equal to or greater than the pressure of the fluid within the chamber, there being provided an actuating arrangement to reduce the pressure of said pilot fluid supply below the pressure of the fluid within the chamber so as to move the valve member towards said second position.

2. A safety arrangement according to claim 1, wherein said valve member comprises a membrane fixed around its periphery and moveable between a substantially convex configuration and a substantially concave configuration, one side of the membrane being in fluid communication with the pilot fluid supply and the opposite side of the membrane sealing against the valve seat when the membrane adopts said first position.

3. A safety arrangement according to claim 2, wherein the membrane is monostable and configured to return to said first position after actuation of the valve arrangement, when the fluid pressure within the chamber reduces to a predetermined level.

4. A safety arrangement according to any preceding claim, wherein the valve arrangement is provided in a side wall of said chamber.

5. A safety arrangement according to any preceding claim, wherein said actuating arrangement comprises a second valve arrangement actuable to vent said pilot fluid supply to atmosphere in response to said signal.

6. A safety arrangement according to claim 5, wherein said second valve arrangement is actuable by a solenoid.

7. A safety arrangement according to any preceding claim wherein a suspension unit is provided between the axle or bearing of each front wheel of the vehicle and a fixed part of the vehicle structure, each suspension unit incorporating a said component of adjustable length.

8. A safety arrangement according to any claim 8, wherein the chamber comprises a deformable inflatable element located between two suspension

elements, the suspension elements being moveable telescopically relative to each other, but being distanced by the inflatable element, one said suspension element being connected to the fixed part of the vehicle structure and the other suspension element being connected to the axle or bearing of the wheel of the vehicle.

9. A safety arrangement according to claim 8, wherein the inflatable element is filled with gas.

10. A safety arrangement according to claim 9, wherein an inflator arrangement is provided to inflate the inflatable element when gas has been permitted to escape therefrom by the valve arrangement.

11. A safety arrangement according to claim 10, wherein the inflator arrangement comprises a compressor configured to supply compressed to the inflatable element and also to the valve member, so as to maintain said pilot fluid supply at the same pressure as the fluid within the inflatable element.

12. A safety arrangement substantially as herein described with reference to and as shown in Figures 3 to 7 the accompanying drawings.

13. Any novel feature or combination of features disclosed herein.
